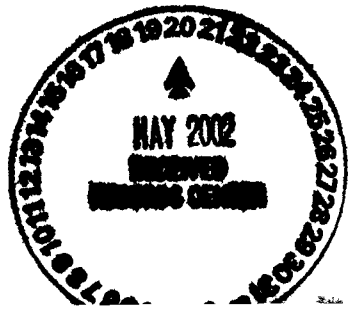
ENVIRONMENTAL RESTORATION
RFCA STANDARD OPERATING PROTOCOL
FOR ROUTINE SOIL REMEDIATION
FY02
NOTIFICATION #02-06
IHSS GROUP 400-7



May 2002

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ACRONYMS

AL	action level
D&D	Decontamination and Decommissioning
cy	cubic yard
EDDIE	Environmental Data Dynamic Information Exchange
ER	Environmental Restoration
ER RSOP	Environmental Restoration RSOP for Routine Soil Remediation
FY	Fiscal Year
IA	Industrial Area
IASAP	Industrial Area Sampling and Analysis Plan
IHSS	Individual Hazardous Substance Site
mg/kg	milligram per kilogram
NPWL	New Process Waste Lines
OPWL	Original Process Waste Lines
PAC	Potential Area of Concern
PCB	polychlorinated biphenyl
pCi/g	picocuries per gram
PCOC	potential contaminant of concern
POC	Point of Compliance
POE	Point of Evaluation
RCRA	Resource Conservation and Recovery Act
RFCA	Rocky Flats Cleanup Agreement
RFETS	Rocky Flats Environmental Technology Site
RISS	Remediation, Industrial D&D, and Site Services
RSOP	RFCA Standard Operating Protocol
SVOC	semivolatile organic compound
UBC	Under Building Contamination
VOC	volatile organic compound

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1.0 INTRODUCTION

This Environmental Restoration (ER) Rocky Flats Cleanup Agreement (RFCA) Standard Operating Protocol (RSOP) for Routine Soil Remediation (ER RSOP) (DOE 2002) Fiscal Year (FY)02 Notification includes the notification to remediate Individual Hazardous Substance Sites (IHSSs), Potential Areas of Concern (PACs), and Under Building Contamination (UBC) Sites at the Rocky Flats Environmental Technology Site (RFETS) Industrial Area (IA) during FY02 The purpose of this Notification is to invoke the ER RSOP for IHSS Group 400-7 Activities specified in the ER RSOP are not reiterated here, however deviations from the ER RSOP are noted where appropriate

Soil with contaminant concentrations greater than RFCA Tier I Action Levels (ALs) and associated debris will be removed in accordance with RFCA and the ER RSOP Soil with contaminant concentrations less than RFCA Tier I ALs will be evaluated for additional removal through the consultative process using stewardship and ALARA considerations (Section 5.4 and 5 5 of the ER RSOP)

Proposed remediation sites covered under ER RSOP Notification #02-06 are listed in Table 1 and the locations are shown on Figure 1

Table 1
FY02 Potential Remediation Areas

IHSS Group	IHSS/PAC/UBC	PCOCs	Media	Approximate Volume
400-7	UBC 442 – Filter Test Facility	Radionuclides Metals SVOCs VOCs	Surface and Subsurface Soil	Approximately 115 cy
	400-157 1 – Radioactive Site North Area	Radionuclides Metals SVOCs VOCs	Surface and Subsurface Soil	<1 cy
	400-129 – Building 443 Oil Leak	Radionuclides Metals TPH VOCs	Surface and Subsurface Soil	<1 cy
	400-187 – Sulfuric Acid Spill Building 443	Radionuclides pH	Surface Soil	<1 cy

2.0 IHSS GROUP 400-7

IHSS Group 400-7 includes UBC 442 – Filter Test Facility, IHSS 400-157 1 – Radioactive Site North Area, IHSS 400-129 – Building 443 Oil Leak, and IHSS 400-187 – Sulfuric Acid Spill Building 443 IHSS Group 400-7 is shown on Figure 2

2.1 Potential Contaminants of Concern

Potential contaminants of concern (PCOCs) at IHSS Group 400-7 were determined based on process knowledge and data collected during previous studies (DOE 1992-2001, DOE 2001a, DOE 2000a)

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2.2 Project Conditions

The following conditions are present at this site

- UBC 442 (Building 442 and floor slab, Building 442 was removed by the Remediation, Industrial Decontamination and Decommissioning [D&D], and Site Services [RISS] Facility D&D staff),
- New Process Waste Lines (NPWL) and Valve Vaults 16 and 20 (Figure 2),
- Because this site is close to the Steam Plant access is limited ER will coordinate removal actions with RISS Facility D&D staff,
- Potentially contaminated, grouted sewer line west of UBC442, and
- Four tanks (including the No 4 Fuel Tank [foamed]) are present west of Building 442 in IHSS 129 Tanks will be removed by RISS Facility D&D staff at a later date

2.3 Remediation Plan

This RSOP Notification remediation plan for IHSS Group 400-7 includes the following objectives

- Remove structures and pipelines if within 3 feet of existing grade, if not removed by RISS Facility D&D staff,
- Remove soil contaminated above RFCA Tier I ALs (Figure 2),
- Remove contaminated soil to below RFCA Tier I ALs if indicated through the stewardship evaluation (Section 2 4),
- Remove NPWL and valve vaults if contaminated above RFCA Tier I ALs,
- Remove the sewer line west of UBC 442 if contaminated above RFCA Tier I ALs (Sewer lines within the building footprint will be removed if within 3 feet of the surface if not removed by RISS Facility D&D staff,
- Recycle the UBC 442 floor slab, in accordance with the RSOP for Recycling Concrete (DOE 1999), or dispose of,
- The four tanks west of Building 442 will be removed by RISS Facility D&D staff at a later date Remediation of potentially contaminated soil is covered under this Notification and will be coordinated with the RISS Facility D&D staff, and
- Collect confirmation samples in accordance with the Industrial Area Sampling and Analysis Plan (IASAP) (DOE 2001)

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It is anticipated that after remediation there will be areas with concentrations of metals, radionuclides, and organics greater than background plus two standard deviations or method detection limits, but below RFCA Tier II ALs, at this site Additionally, it is anticipated that there will be very few areas with concentrations above RFCA Tier II ALs

2.4 Stewardship Evaluation

Based on the PCOCs (Table 1 and Section 2 1) and the ER RSOP (DOE 2002), it is anticipated that all contamination above RFCA Tier I ALs will be remediated Figure 2 shows the potential remediation area Additional remediation to below Tier I ALs is not required by RFCA but will be evaluated using the consultative process

Because the full extent of excavation and remediation is not known at this time, an additional stewardship evaluation will be conducted during remediation using the consultative process A new map of residual contamination will be generated after remediation The following sections contain the stewardship evaluation

2.4.1 Proximity to Other Contaminant Sources

IHSS Group 400-7 is in the RFETS IA Nearby potential contaminant sources, PCOCs, media of interest, and the proximity and relationship to IHSS Group 400-7 are listed in Table 2 and shown on Figure 2

Table 2
Other Potential Contaminant Sources for IHSS Group 400-7

IHSS Group	PCOCs	Media	Distance from IHSS Group 400-7
000-3 – IHSS 190 – Central Avenue Caustic Leak	Sodium Hydroxide	Surface Soil	Overlapping on the north
400-4 – PAC 400-804 – Road North of Building 460	Radionuclides	Surface Soil	Approximately 85 feet to the south
600-2 – PAC 400-802 – Storage Area South of 334	Radionuclides VOCs	Surface and Subsurface Soil	Overlapping on the east
000-2 – OPWL	Radionuclides Metals VOCs	Subsurface Soil	Approximately 20 feet to the west

IHSS Groups 400-4, 600-2, and 000-2 have PCOCs similar to, and in the same media as, IHSS Group 400-7 It is anticipated that after remediation of these IHSS Groups, they will have residual contamination in subsurface soil similar to the residual contamination anticipated at IHSS Group 400-7 The only PCOC at IHSS 190 is sodium hydroxide, which does not affect stewardship considerations at IHSS Group 400-7

2.4.2 Surface Water Protection

Surface water protection includes the following considerations

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Is there a pathway to surface water from potential erosion to streams or drainages?

This site is in a flat-lying area not prone to erosion However, a drainage ditch is located north and east of the site

Do characterization data indicate there are contaminants in surface soil?

Table 3 lists radionuclide data from IHSS Group 400-7, along with background values and RFCA ALs for comparison

Table 3
Surface Soil Characterization Summary

Analyte	Maximum Result (pCi/g)	Background Plus Two Standard Deviations (pCi/g)	Tier II AL (pCi/g)	[illegible]
Americium-241	0 04	0 0227	38	215
Uranium-234	3 24	2 253	307	1,738
Uranium-235	0 122	0 0939	24	135
Uranium-238	5 26	2	103	586
Analyte	Maximum Result (mg/kg)	Background Plus Two Standard Deviations (mg/kg)	[illegible]	[illegible]
Lead	38 2	24 97	1,000	1,000

Do monitoring results from Points of Evaluation (POEs) or Points of Compliance (POCs) indicate there are surface water impacts from the area under consideration?

There are no POEs or POCs in the immediate vicinity of IHSS Group 400-7

Is the IHSS Group in an area with high erosion potential, based on the 100-Year Average Erosion Map?

Not applicable The 100-Year Average Erosion Map does not include areas in the IA

2.4.3 Monitoring

Monitoring includes the following considerations

Do monitoring results from POEs or POCs indicate there are groundwater impacts from the area under consideration?

There are no POEs or POCs near IHSS Group 400-7

Can the impact be traced to a specific IHSS Group?

There are no groundwater monitoring wells near IHSS Group 400-7

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Are additional monitoring stations needed?

Not applicable

Can existing monitoring locations be deleted if additional remediation is conducted?

Not applicable

2.4.4 Stewardship Actions and Recommendations

The current stewardship actions and recommendations for IHSS Group 400-7 are as follows

- Implement near-term institutional controls until final closure and stewardship decisions are implemented, including the following
  - Signs and barriers,
  - Restrictions on soil excavation, and
  - Soil excavations controlled through the Site Soil Disturbance Permit process
- Implement long-term stewardship actions, including the following
  - Federal ownership, and
  - Land use restrictions to prevent soil excavation Specific land use restrictions will be discussed in the Site Long-Term Stewardship Plan

These recommendations may change based on in-process remediation activities and other future RFETS remediation decisions

2.5 Accelerated Action Remediation Goals

ER RSOP remedial action objectives include the following

1 Provide a remedy consistent with the RFETS goal of protection of human health and the environment,

2 Provide a remedy that minimizes the need for long-term maintenance and institutional or engineering controls, and

3 Minimize the spread of contaminants during implementation of accelerated actions

The accelerated action remediation goals for IHSS Group 400-7 include the following

- Remove contaminated soil to below Tier I ALs (Figure 2),
- Remove structures and pipelines if within 3 feet of existing grade, if not removed by RISS Facility D&D staff,
- Remove contaminated soil to below Tier I ALs if indicated through the stewardship evaluation or ALARA evaluations (the consultative process),

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- Remove NPWL and valve vaults if contaminated or within 3 feet of the surface,
- Remove sewer line west of UBC 442 if contaminated or within 3 feet of the surface, and
- Recycle the UBC 442 floor slab, in accordance with the RSOP for Recycling Concrete (DOE 1999), or dispose of

2.6 Treatment

Not applicable

2.7 Project-Specific Monitoring

High-volume air samplers may be used at the remediation area consistent with work controls to determine airborne radioactivity concentrations Approximate locations of air samplers are shown on Figure 2

2.8 RCRA Units and Intended Waste Disposition

Resource Conservation and Recovery Act (RCRA) Unit 374 3 includes NPWL and Valve Vaults 16 and 20 (Figure 2) It is anticipated that waste from these units will be classified as low-level mixed waste

2.9 Administrative Record Documents

DOE, 1992 - 2001, Historical Release Reports for the Rocky Flats Plant, Golden, Colorado

DOE, 1999, RFCA Standard Operating Protocol for Recycling Concrete, Rocky Flats Environmental Technology Site, Golden, Colorado, September

DOE, 2000, Industrial Area Data Summary Report, Rocky Flats Environmental Technology Site, Golden, Colorado, September

DOE, 2001, Industrial Area Sampling and Analysis Plan, Rocky Flats Environmental Technology Site, Golden, Colorado, June

DOE, 2002, Environmental Restoration RFCA Standard Operating Protocol for Routine Soil Remediation, Rocky Flats Environmental Technology Site, Golden, Colorado, January

2.10 Projected Schedule

Remediation of IHSS Group 400-7 will begin in May 2002

3.0 PUBLIC PARTICIPATION

ER RSOP Notification #02-06 activities were discussed at the March and April 2002 ER/D&D Status meetings This Notification is available at the Rocky Flats Reading

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Rooms and on the Environmental Data Dynamic Information Exchange (EDDIE) website at www rfets gov

4.0 REFERENCES

DOE, 1992 - 2001, Historical Release Reports for the Rocky Flats Plant, Golden, Colorado

DOE, 1999, RFCA Standard Operating Protocol for Recycling Concrete, Rocky Flats Environmental Technology Site, Golden, Colorado, September

DOE, 2000, Industrial Area Data Summary Report, Rocky Flats Environmental Technology Site, Golden, Colorado, September

DOE, 2001, Industrial Area Sampling and Analysis Plan, Rocky Flats Environmental Technology Site, Golden, Colorado, June

DOE, 2002, Environmental Restoration RFCA Standard Operating Protocol for Routine Soil Remediation, Rocky Flats Environmental Technology Site, Golden, Colorado, January

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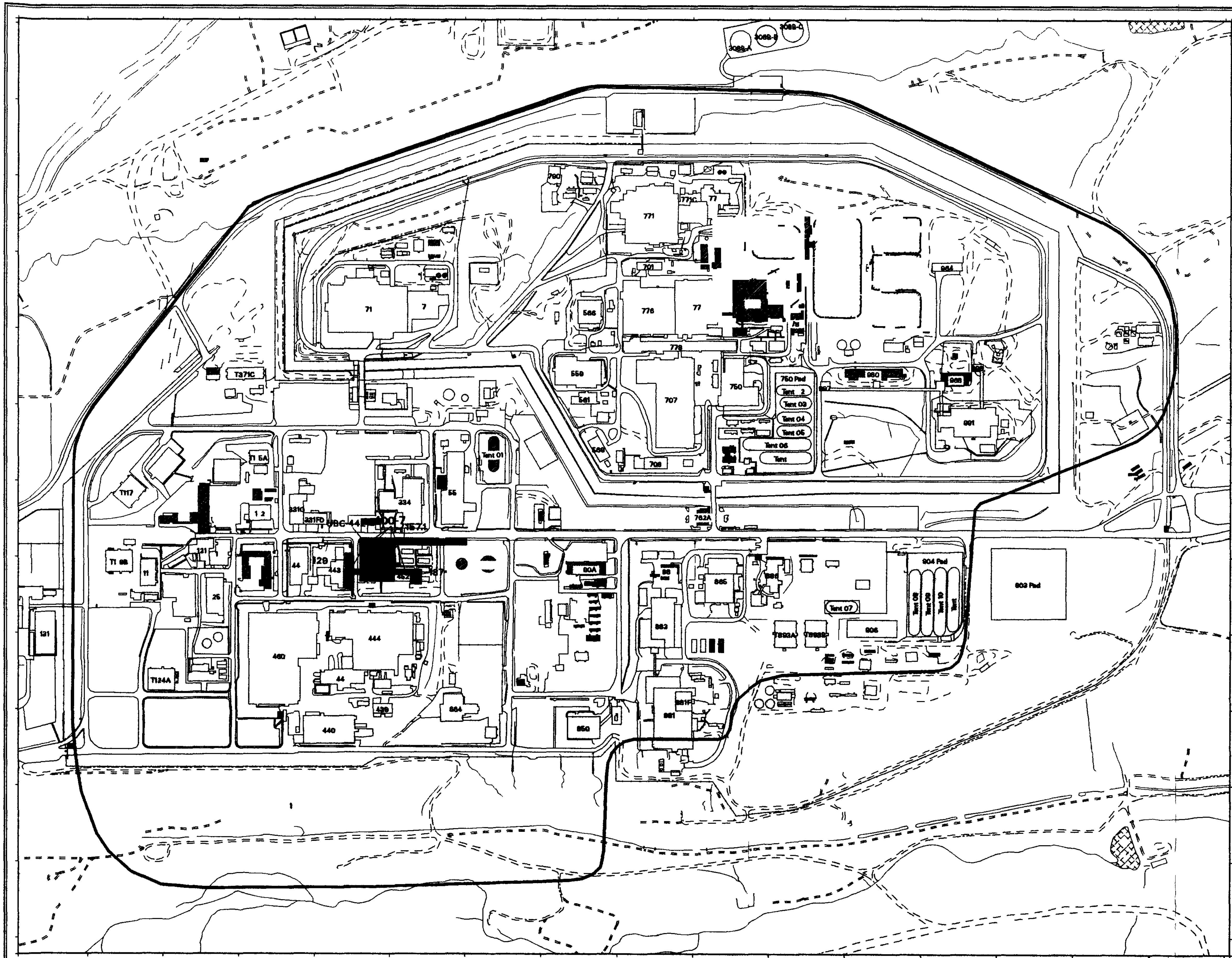

Figure 1
IA Groups Location Map

EXPLANATION

IHSS Groupings

400-7

Standard M p Feature

- Buildings nd h ruc res
- Demolished buildings
- Sola E pora on Ponds (SEPs)
- Lakes nd ponds
- Streams ditches r the drainage features
- Fences nd othe barriers
- Paved roads
- Di roads
- Industrial Area Ope bl Unit Boundary

DATA SOURCE BASE FEATURES:
PACs
Historical Release Report (HRR)
2nd Annual Update
Sept 30, 1997
Individual Hazardous Substance Sites (IHSS)
OF 1992, HRR Report and Subsequent Updates.
Buildings, fences, hydrography, roads and other structures from 1994 aerial fly-over data captured by EG&G RSL, Las Vegas.
Digitized from the orthophotographs. 1/95

Scale 1 6330
1 inch represents approximately 528 fee

State Plane Coordinate Projection
Colorado Central Zone
Datum NAD27

U S Department of Energy
Rocky Flats Environmental Technology Site

GIS Dept. 303-966-7707

Prepared by: DynCorp

Prepared fo: KAISER HILL

March 18, 2002

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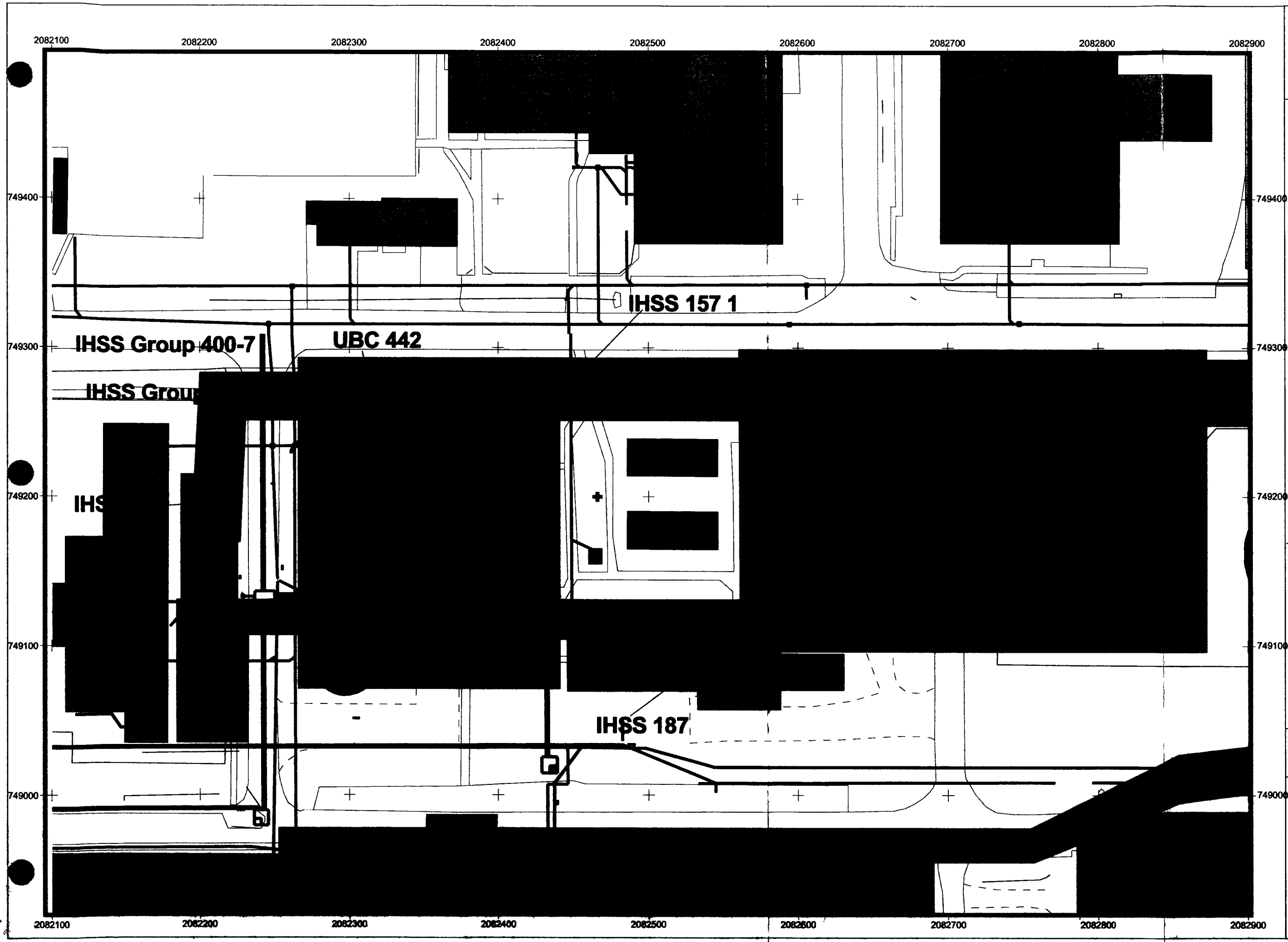

Figure 2
IHSS Group 400-7
Potential Remediation Area

KEY

- UBC
- PAC
- NPWL
- OPWL
- Sewer Line
- Building Location
- Dirt Road
- Stream Ditch or Other Drainage Feature
- Fence shp
- Paved Areas
- Potential Air Sampling Location

IHSS Group

- 000-3
- 400-3
- 400-5
- 400-6
- 400-7

N

Scale = 1 750

30 0 30 60 Feet

State Plane Coordinate Projection
Colorado Central Zone
Datum NAD 27

U S Department of Energy
Rocky Flats Environmental Technology Site

Prepared by:

KAISER-HILL

Prepared for:

400-7notification.apr May 2002